THEMATIC FUNDS – PROFITABLE INVESTMENT ALTERNATIVE FOR SMART INVESTORS IN STOCK MARKETS

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ABSTRACT

One of the main characteristics of the stock market is its dynamic nature and its consistent variation to factorize all future events affecting the economy and business entities within the country as well as outside the country. Volatility in the stock market is appreciated by aggressive investors who wish to earn high returns in comparison to the other traditional investment alternatives available in the financial market. As high return follows from high risk, one is always advised to exercise all kinds of caution before investing in stocks of the company. But the pace at which returns are generated, sometimes even during a short span, tempts one to forget all do's and don'ts and get carried away with the trend. It is during this euphoric state that one fails to distinguish between good and bad and starts treating all sectors as well as companies equally. However, it has been observed that despite the secular upward trend of a market index, thematic indices may exhibit movement in significantly different directions. The present study has been conducted to examine the movement of thematic indices in comparison to broader market indices and therefore cautions investors against painting all sectors with the same brush during any given period. It also offers a good opportunity for fund managers to allocate their funds to the sectors that are likely to outperform the overall market index and at the same time challenge their ability to forecast sector-wise growth of the entire economy. Keeping in view these facts in the background, this study has been conducted using various statistical tests such as Kolmogorov-Smirnov, Levene Statistic, ANOVA, and Multiple Comparison Post Hoc tests to arrive at a meaningful interpretation.

KEYWORDS: Thematic Indices, Nifty PSE, Nifty ESG100, Nifty 50, Kolmogorov Smirnov, Levene Statistic, ANOVA and Multiple Comparison Post Hoc Test

INTRODUCTION

Stock market indices are used to gauge the overall economic health of a country. They are formed by selecting stocks from various companies representing different sectors of the economy. The purpose of this approach is to provide a comprehensive and accurate representation of the economy's performance. However, it is important to note that different sectors of the economy may perform differently, which can affect the accuracy of the broader market index. For example, some sectors may grow at a slower rate, while others may experience rapid growth. Therefore, investment analysts, portfolio managers, and stock market experts closely monitor the movement of specific indices. This allows them to make informed investment decisions and adjust their portfolios in favour of sectors that are expected to perform better than the broader market index. By keeping a close eye on the performance of different sectoral indices, these professionals can identify trends and patterns that may indicate which sectors are likely to outperform or underperform in the future. This helps them to capitalize on investment opportunities and manage risks associated with stock market investments.

Over the years, many studies have been conducted to investigate whether responsible funds perform differently from the overall financial market **(Bank, 2014)**. These studies have looked at the potential impact of responsible investing principles on the risk-adjusted performance of funds **(Ielasi et al., 2018)**. The majority of these studies have found that responsible funds do not significantly differ from the overall market in terms of their risk-adjusted performance **(Lithin et al., 2021)** . This suggests that the constraints imposed by responsible investing principles do not have a significant impact on the returns of funds, either before or after fees **(Ielasi and Rossolini, 2019)**. However, it is worth noting that some authors have pointed out that responsible funds may over- or under-perform compared to conventional funds during specific periods **(Methling and von Nitzsch, 2020)**. These variations in performance may be attributed to several factors such as market conditions, fund management strategies, and the specific responsible investing principles employed by the fund **(Sarkar, 2022)**. Despite these variations, the findings of the studies suggest that responsible investing principles do not hurt the performance of funds and that investors can still achieve their financial goals while investing responsibly and sustainably **(Goel and Ahluwalia, 2021)**. As a novice investor, it is crucial to consider various factors before making any investment decision **(Chauhan, 2023)** s. One

should start by identifying their investment objectives and risk tolerance levels **(Waqas et al., 2023).** This helps in determining the investment strategy and the type of investment products that are suitable for their financial goals **(Bai et al., 2022)**. It is also vital to understand the selected investment product and its underlying financial conditions **(Sabu and Bhat, 2022)**. This includes analyzing the historical performance, associated fees, and other critical factors that can impact the investment returns **(Sabu and Bhat, 2022)**. Moreover, verifying the investment instruments is essential to ensure that they are legitimate and compliant with the relevant regulatory requirements **(Martí-Ballester, 2022)**. For beginners who want to start investing, mutual funds can be an excellent alternative **(Martí-Ballester, 2019)**. Mutual funds are relatively easy investment products that can be understood and accessed by anyone, even beginners **(Martí-Ballester, 2023)**. They offer a diversified portfolio of stocks, bonds, or other securities, which helps in reducing the investment risks **(Gudimetla, 2015)**. Additionally, mutual funds are professionally managed, which means that investors can benefit from the expertise of the fund managers **(Fraile et al., 2023)**.

MATERIALS AND METHODS

This study has been conducted to examine the magnitude and direction of the industry-specific indices against the movement of broader market indices in the Indian Stock market. The outcome of the study would be relevant for many retail investors as well as fund managers by apprising them of the fact that merely index upward movement does not add to shareholders' wealth rather a consistent track of the market and portfolio revision at regular intervals is necessary to end up with excess return over market index return.

The returns (in percentage) every month generated by the Nifty PSE (thematic index on the National Stock Exchange (NSE) consisting of 20 stocks of the Indian public sector enterprises), Nifty ESG 100 (Thematic index designed to reflect the performance of companies within Nifty 100 index based on Environmental, Social and Governance (ESG) risk score) and Nifty 50 for the period February 2023 to January 2024 were calculated using values available on National Stock Exchange website. The percentage return of all indices relative to their values as of Feb 1, 2023, has been calculated using the formula:

Return as on date 't' = [(It – I0)/ I0] / x100

Where

It = Index value as on date' t '

I0 = Index value as of February 1, 2023

The return calculated every month in the three indices, using the above formula, has been shown below in Table 1:

S.No.	Return on (concerning value as of Feb 1, 2023)	Nifty PSE	Nifty ESG 100	Nifty 50
1	28-Feb-23	1.76	-3.96	-2.4
2	31-Mar-23	3.72	-4.95	-3.38
3	28-Apr-23	8.57	-1.31	0.78
4	31-May-23	11.27	4.13	4.39
5	30-Jun-23	17.8	7.26	7.1
6	31-Jul-23	27.76	9.93	10.41
7	31-Aug-23	26.5	9.5	8.78
8	29-Sep-23	38.9	11.01	9.94
9	31-Oct-23	36.48	8.97	7.98
10	30-Nov-23	57.15	15.62	12.9
11	29-Dec-23	82.1	25.21	22.04
12	31-Jan-24	101	25.11	20.64

Table 1: Return every month generated by Nifty PSE, Nifty ESG 100 and Nifty50 index.

It can be observed from the above table that significant differences occurred in the returns offered by these three indices during the period under study. To examine, if these differences are statistically significant or not, appropriate statistical depending on the nature of the sample would be used. Therefore, the study tests the null hypothesis that there is no significant difference among the returns generated by these indices.

H0: Mean Return on Nifty PSE = Mean Return on Nifty ESG = Mean Return on Nifty 50 (Null Hypothesis)

Ha: Mean Return on Nifty PSE ≠ Mean Return on NIFTY ESG ≠Mean Return on Nifty 50 (Alternative Hypothesis)

RESULTS AND DISCUSSIONS

The descriptive statistics of the data shown in Table 1 have been obtained using SPSS which is shown in Table 2.

Return								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Ret-PSE	12	34.4175	31.39754	9.06369	14.4685	54.3665	1.76	101.00
Re-tESG	12	8.8767	9.84747	2.84272	2.6199	15.1334	-4.95	25.21
Ret-NIfty	12	8.2650	7.94226	2.29273	3.2187	13.3113	-3.38	22.04
Total	36	17.1864	22.64703	3.77451	9.5237	24.8490	-4.95	101.00

Table 2: Descriptive Statistics of Monthly returns by Nifty PSE, Nifty ESG 100 and Nifty50 index.

As can be observed, the mean return as well as the variability of return in the case of the Nifty ESG 100 and Nifty 50 Index are almost similar but the mean return and variability of the Nifty PSE index is considerably different from these two indices.

To examine and test, if the differences are statistically significant, the values were subjected to way ANOVA test. As it is a parametric test, the essential conditions such as a test of independence of sample, normality of data and homogeneity of variances in the sample test have been ensured.

Test of Independence

The condition about independence of samples has been met as the components in the form of stocks of Nifty PSE and Nifty ESG 100 indices are entirely different. The majority of the stocks in Nifty 50 (Broader market index) are different from the stocks in these two indices.

Test of Normality

The assumption of normality of data has been examined using a one-sample Kolmogorov-Smirnov test (K-S test) using SPSS. The result of the output is summarized below in Table 3.

One-Sample Kolmogorov-Smirnov Test				
		RetPSE	RetESG	RetNifty
N		12	12	12
Normal Parameters a, b	Mean	34.4175	8.8767	8.2650
	Std. Deviation	31.39754	9.84747	7.94226
Most Extreme Differences	Absolute	.193	.164	.144
	Positive	.193	.164	.144
	Negative	-.149	-.117	-.108
Kolmogorov-Smirnov Z		.669	.569	.497
Asymp. Sig. (2-tailed)		.761	.903	.966
a. Test distribution is Normal.				
b. Calculated from data.				

Table 3: Test Normality of Monthly returns by Nifty PSE, Nifty ESG 100 and Nifty50 index

As can be observed from the above calculation, the p-value (Asymp. Sig) is greater than .05, therefore, we can conclude that our data complies with the condition of normality. To test the homogeneity of variances among returns, the Levene statistic has been calculated using SPSS, as shown below in Table 4:

Test of Homogeneity of Variances			
Return on Indices			
Levene Statistic	df1	df2	Sig.
8.533	2	33	.010

Table 4: Test Homogeneity of variances of Monthly returns Nifty PSE, Nifty ESG 100 and Nifty50 index

The Levene statistic has been used to test the null hypothesis if there is a significant difference among variance of the variables namely Return on the three indices under study. As the p-value of Levene's test is more than the significance level of 0.05, the assumption of the equality of variances complies and the use of a parametric test would be more appropriate.

Based on the above analysis of the data, the use of the ANOVA test was considered appropriate in place of. To analyze significant differences among pair(s) of the variable, a Multiple Comparison Post Hoc test has been employed. The data shown in Table 1 was subject to an ANOVA test, using SPSS, and the output of the same is shown below:

ANOVA					
Return					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5346.646	2	2673.323	6.999	.003
Within Groups	12604.435	33	381.953		
Total	17951.081	35			

Table 5: Test Statistic using ANOVA

As can be observed from Table 5, the p-value is 0.03 i.e. less than 0.05 which implies that the null hypothesis of the study that there is no significant difference in the mean return of these indices is rejected at a 5 percent level of significance. In other words, there is a significant difference among the returns offered by the indices under study. The difference in their value, whether statistically significant or not, could be assessed from the test statistic shown in Table 6.

Multiple Comparisons						
Dependent Variable: Return LSD						
Indices	Indices	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Ret Nifty PSE	Ret Nifty ESG	25.54083*	7.97864	.003	9.3082	41.7735
	Ret Nifty 50	26.15250*	7.97864	.002	9.9198	42.3852
Ret Nifty ESG	Ret Nifty PSE	-25.54083*	7.97864	.003	-41.7735	-9.3082
	Ret Nifty 50	.61167	7.97864	.939	-15.6210	16.8443
Ret Nifty 50	Ret Nifty PSE	-26.15250*	7.97864	.002	-42.3852	-9.9198
		-.61167	7.97864	.939	-16.8443	15.6210
*. The mean difference is significant at the 0.05 level.						

Table 6: Multiple Comparison Post Hoc test among Monthly returns Nifty PSE, Nifty ESG 100 and Nifty50 index

The Multiple Comparison Post Hoc test has been conducted to test the following null hypotheses:

Null Hypothesis 1: There is no significant difference between the mean return of Nifty PSE and Nifty ESG100.
Alternative Hypothesis 1: There is a significant difference between the mean return of Nifty PSE and Nifty ESG100.

Null Hypothesis 2: There is no significant difference between the mean return of Nifty PSE and Nifty 50.
Alternative Hypothesis 2: There is a significant difference between the mean return of Nifty PSE and Nifty 50.

Null Hypothesis 3: There is no significant difference between the mean return of Nifty ESG 100 and Nifty 50.

Alternative Hypothesis 3: There is a significant difference between the mean return of Nifty ESG 100 and Nifty 50.

As can be observed from the output, the p-value in case Ret on Nifty PSE and Return on Nifty ESG is 0.03, which is less than 0.05 which implies that the null hypothesis 1 is rejected at a 5 percent level of significance. In other words, there is a significant difference in the mean return offered by Nifty PSE and Nifty ESG 100. Similarly, the p-value in the case Ret on Nifty PSE and Return on Nifty 50 is 0.02, which is less than 0.05 which implies that the null hypothesis 2 is rejected at a 5 percent level of significance. In other words, there is a significant difference in the mean return offered by Nifty PSE and Nifty 50. However, the p-value in the case of Return on Nifty ESG and Return on Nifty 50 happens to be 0.939 which is more than 0.05. This implies the null hypothesis that there is no significant difference between the Return on Nifty ESG and Nifty 50 is accepted.

CONCLUSION

The purpose of a recent study was to test the hypothesis that all sectors move in tandem with the broader market index, commonly referred to as SENSEX at the Mumbai Stock Exchange in Mumbai, India, or NIFTY at The National Stock Exchange of India. To conduct the study, the movement of three indices, namely Nifty PSE, Nifty ESG 100, and Nifty 50, was tracked from February 2023 to January 2024, and their monthly returns were calculated and compared using appropriate statistical tests based on characteristics of the data observed for the study. The results of the study showed that these three indices offered significantly different returns during the same period. This outcome is particularly relevant for fund managers and investors in the stock market in India, as it contradicts the common belief among the large investor community that shareholder wealth keeps increasing with the rise in the market index's value. The study reveals that investors must exercise abundant caution while investing in the stock markets or selecting stocks for investment, as some thematic indices may outperform the market index, while others may heavily underperform and can even lead to negative returns in some situations. The study also suggests that the outperformance of the Nifty PSE index against the broader market index, i.e., the Nifty 50 index, offers an opportunity for fund managers to create core-satellite portfolios. Hence, fund managers, as well as experienced investors, must avoid following the passive strategy of portfolio management by committing most of their funds to stocks contained in the broader market index. Instead, they should search for upcoming opportunities in the market and allocate part of their funds towards thematic funds to generate an overall return higher than the return offered by the market index. In conclusion, the study's findings imply that investors need to stay informed and vigilant about the stock market's trends, and fund managers must identify emerging opportunities to maximize returns while minimizing risks.

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